

SEQUENCE LISTING



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TECH CENTER 1600/2600

<110> Korpela, Matti
 Karp, Matti
 Kurittu, Jussi

<120> A New Assay Method

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 <141> 2000-04-24

<150> PCT/FI98/00873
 <151> 1998-11-11

<150> FI 974235
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 <303> J. Bacteriol.
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Glu Ile Phe Pro Glu Ser Asp Asp Leu Val Gln Ser Ile Asn Phe Gly
20 25 30

Asp Asn Ser Val Tyr Leu Pro Ile Leu Asn Asp Ser His Val Lys Asn
 35 40 45
 Ile Ile Asp Cys Asn Gly Asn Asn Glu Leu Arg Leu His Asn Ile Val
 50 55 60
 Asn Phe Leu Tyr Thr Val Gly Gln Arg Trp Lys Asn Glu Glu Tyr Ser
 65 70 75 80
 Arg Arg Arg Thr Tyr Ile Arg Asp Leu Lys Lys Tyr Met Gly Tyr Ser
 85 90 95
 Glu Glu Met Ala Lys Leu Glu Ala Asn Trp Ile Ser Met Ile Leu Cys
 100 105 110
 Ser Lys Gly Gly Leu Tyr Asp Val Val Glu Asn Glu Leu Gly Ser Arg
 115 120 125
 His Ile Met Asp Glu Trp Leu Pro Gln Asp Glu Ser Tyr Val Arg Ala
 130 135 140
 Phe Pro Lys Gly Lys Ser Val His Leu Leu Ala Gly Asn Val Pro Leu
 145 150 155 160
 Ser Gly Ile Met Ser Ile Leu Arg Ala Ile Leu Thr Lys Asn Gln Cys
 165 170 175
 Ile Ile Lys Thr Ser Ser Thr Asp Pro Phe Thr Ala Asn Ala Leu Ala
 180 185 190
 Leu Ser Phe Ile Asp Val Asp Pro Asn His Pro Ile Thr Arg Ser Leu
 195 200 205
 Ser Val Ile Tyr Trp Pro His Gln Gly Asp Thr Ser Leu Ala Lys Glu
 210 215 220
 Ile Met Arg His Ala Asp Val Ile Val Ala Trp Gly Gly Pro Asp Ala
 225 230 235 240
 Ile Asn Trp Ala Val Glu His Ala Pro Ser Tyr Ala Asp Val Ile Lys
 245 250 255
 Phe Gly Ser Lys Lys Ser Leu Cys Ile Ile Asp Asn Pro Val Asp Leu
 260 265 270
 Thr Ser Ala Ala Thr Gly Ala Ala His Asp Val Cys Phe Tyr Asp Gln
 275 280 285
 Arg Ala Cys Phe Ser Ala Gln Asn Ile Tyr Tyr Met Gly Asn His Tyr
 290 295 300
 Glu Glu Phe Lys Leu Ala Leu Ile Glu Lys Leu Asn Leu Tyr Ala His
 305 310 315 320
 Ile Leu Pro Asn Ala Lys Lys Asp Phe Asp Glu Lys Ala Ala Tyr Ser
 325 330 335
 Leu Val Gln Lys Glu Ser Leu Phe Ala Gly Leu Lys Val Glu Val Asp
 340 345 350
 Ile His Gln Arg Trp Met Ile Ile Glu Ser Asn Ala Gly Val Glu Phe
 355 360 365

Asn Gln Pro Leu Gly Arg Cys Val Tyr Leu His His Val Asp Asn Ile
370 375 380

Glu Gln Ile Leu Pro Tyr Val Gln Lys Asn Lys Thr Gln Thr Ile Ser
385 390 395 400

Ile Phe Pro Trp Glu Ser Ser Phe Lys Tyr Arg Asp Ala Leu Ala Leu
405 410 415

Lys Gly Ala Glu Arg Ile Val Glu Ala Gly Met Asn Asn Ile Phe Arg
420 425 430

Val Gly Gly Ser His Asp Gly Met Arg Pro Leu Gln Arg Leu Val Thr
435 440 445

Tyr Ile Ser His Glu Arg Pro Ser Asn Tyr Thr Ala Lys Asp Val Ala
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Val Glu Ile Glu Gln Thr Arg Phe Leu Glu Glu Asp Lys Phe Leu Val
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Phe Val Pro

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<212> PRT
<213> Photorhabdus luminescens

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Glu Gly Asn Lys Lys Ile His Val Trp Glu Thr Leu Pro Glu Asn
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Ser Pro Lys Arg Lys Asn Ala Ile Ile Ile Ala Ser Gly Phe Ala Arg
35 40 45

Arg Met Asp His Phe Ala Gly Leu Ala Glu Tyr Leu Ser Arg Asn Gly
50 55 60

Phe His Val Ile Arg Tyr Asp Ser Leu His His Val Gly Leu Ser
65 70 75 80

Gly Thr Ile Asp Glu Phe Thr Met Ser Ile Gly Lys Gln Ser Leu Leu
85 90 95

Ala Val Val Asp Trp Leu Thr Thr Arg Lys Ile Asn Asn Phe Gly Met
100 105 110

Leu Ala Ser Ser Leu Ser Ala Arg Ile Ala Tyr Ala Ser Leu Ser Glu
115 120 125

Ile Asn Ala Ser Phe Leu Ile Thr Ala Val Gly Val Val Asn Leu Arg
130 135 140

Tyr Ser Leu Glu Arg Ala Leu Gly Phe Asp Tyr Leu Ser Leu Pro Ile
145 150 155 160

Asn Glu Leu Pro Asp Asn Leu Asp Phe Glu Gly His Lys Leu Gly Ala
165 170 175

Glu Val Phe Ala Arg Asp Cys Leu Asp Phe Gly Trp Glu Asp Leu Ala
180 185 190

Ser Thr Ile Asn Asn Met Met Tyr Leu Asp Ile Pro Phe Ile Ala Phe
195 200 205

Thr Ala Asn Asn Asp Asn Trp Val Lys Gln Asp Glu Val Ile Thr Leu
210 215 220

Leu Ser Asn Ile Arg Ser Asn Arg Cys Lys Ile Tyr Ser Leu Leu Gly
225 230 235 240

Ser Ser His Asp Leu Ser Glu Asn Leu Val Val Leu Arg Asn Phe Tyr
245 250 255

Gln Ser Val Thr Lys Ala Ala Ile Ala Met Asp Asn Asp His Leu Asp
260 265 270

Ile Asp Val Asp Ile Thr Glu Pro Ser Phe Glu His Leu Thr Ile Ala
275 280 285

Thr Val Asn Glu Arg Arg Met Arg Ile Glu Ile Glu Asn Gln Ala Ile
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Ser Leu Ser
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35 40 45

Phe Gly Leu Leu Gly Asn Pro Tyr Val Ala Ala Tyr Leu Leu Gly
50 55 60

Ala Thr Lys Lys Leu Asn Val Gly Thr Ala Ala Ile Val Leu Pro Thr
65 70 75 80

Ala His Pro Val Arg Gln Leu Glu Asp Val Asn Leu Leu Asp Gln Met
85 90 95

Ser Lys Gly Arg Phe Arg Phe Gly Ile Cys Arg Gly Leu Tyr Asn Lys
100 105 110

Asp Phe Arg Val Phe Gly Thr Asp Met Asn Asn Ser Arg Ala Leu Ala
115 120 125

Glu Cys Trp Tyr Gly Leu Ile Lys Asn Gly Met Thr Glu Gly Tyr Met
130 135 140

Glu Ala Asp Asn Glu His Ile Lys Phe His Lys Val Lys Val Asn Pro
145 150 155 160

Ala Ala Tyr Ser Arg Gly Gly Ala Pro Val Tyr Val Val Ala Glu Ser
165 170 175

Ala Ser Thr Thr Glu Trp Ala Ala Gln Phe Gly Leu Pro Met Ile Leu
180 185 190

Ser Trp Ile Ile Asn Thr Asn Glu Lys Lys Ala Gln Leu Glu Leu Tyr
195 200 205

Asn Glu Val Ala Gln Glu Tyr Gly His Asp Ile His Asn Ile Asp His
210 215 220

Cys Leu Ser Tyr Ile Thr Ser Val Asp His Asp Ser Ile Lys Ala Lys
225 230 235 240

Glu Ile Cys Arg Lys Phe Leu Gly His Trp Tyr Asp Ser Tyr Val Asn
245 250 255

Ala Thr Thr Ile Phe Asp Asp Ser Asp Gln Thr Arg Gly Tyr Asp Phe
260 265 270

Asn Lys Gly Gln Trp Arg Asp Phe Val Leu Lys Gly His Lys Asp Thr
275 280 285

Asn Arg Arg Ile Asp Tyr Ser Tyr Glu Ile Asn Pro Val Gly Thr Pro
290 295 300

Gln Glu Cys Ile Asp Ile Ile Gln Lys Asp Ile Asp Ala Thr Gly Ile
305 310 315 320

Ser Asn Ile Cys Cys Gly Phe Glu Ala Asn Gly Thr Val Asp Glu Ile
325 330 335

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340 345 350

Glu Lys Gln Arg Ser Leu Leu Tyr
355 360

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Lys Leu Asn Phe Glu Gln Ile Leu Val Tyr Glu Asn His Phe Ser Asp
35 40 45

Asn Gly Val Val Gly Ala Pro Leu Thr Val Ser Gly Phe Leu Leu Gly
50 55 60

Leu Thr Glu Lys Ile Lys Ile Gly Ser Leu Asn His Ile Ile Thr Thr
65 70 75 80

His His Pro Val Ala Ile Ala Glu Glu Ala Cys Leu Leu Asp Gln Leu
85 90 95

Ser Glu Gly Arg Phe Ile Leu Gly Phe Ser Asp Cys Glu Lys Lys Asp
 100 105 110
 Glu Met His Phe Phe Asn Arg Pro Val Glu Tyr Gln Gln Leu Phe
 115 120
 Glu Glu Cys Tyr Glu Ile Ile Asn Asp Ala Leu Thr Thr Gly Tyr Cys
 130 135 140
 Asn Pro Asp Asn Asp Phe Tyr Ser Phe Pro Lys Ile Ser Val Asn Pro
 145 150 155 160
 His Ala Tyr Thr Pro Gly Gly Pro Arg Lys Tyr Val Thr Ala Thr Ser
 165 170 175
 His His Ile Val Glu Trp Ala Ala Lys Lys Gly Ile Pro Leu Ile Phe
 180 185 190
 Lys Trp Asp Asp Ser Asn Asp Val Arg Tyr Glu Tyr Ala Glu Arg Tyr
 195 200 205
 Lys Ala Val Ala Asp Lys Tyr Asp Val Asp Leu Ser Glu Ile Asp His
 210 215 220
 Gln Leu Met Ile Leu Val Asn Tyr Asn Glu Asp Ser Asn Lys Ala Lys
 225 230 235 240
 Gln Glu Thr Arg Ala Phe Ile Ser Asp Tyr Val Leu Glu Met His Pro
 245 250 255
 Asn Glu Asn Phe Glu Asn Lys Leu Glu Glu Ile Ile Ala Glu Asn Ala
 260 265 270
 Val Gly Asn Tyr Thr Glu Cys Ile Thr Ala Ala Lys Leu Ala Ile Glu
 275 280 285
 Lys Cys Gly Ala Lys Ser Val Leu Leu Ser Phe Glu Pro Met Asn Asp
 290 295 300
 Leu Met Ser Gln Lys Asn Val Ile Asn Ile Val Asp Asp Asn Ile Lys
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 Lys Tyr His Met Glu Tyr Thr
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 Glu Ile Thr Ala Ser Ser Glu Ile Asp Asp Leu Ile Phe Ser Ser Asp
 35 40 45
 Pro Leu Val Trp Ser Tyr Asp Glu Gln Glu Lys Ile Arg Lys Lys Leu
 50 55 60

Val Leu Asp Ala Phe Arg Asn His Tyr Lys His Cys Arg Glu Tyr Arg
 65 70 75 80
 His Tyr Cys Gln Ala His Lys Val Asp Asp Asn Ile Thr Glu Ile Asp
 85 90 95
 Asp Ile Pro Val Phe Pro Thr Ser Val Phe Lys Phe Thr Arg Leu Leu
 100 105 110
 Thr Ser Gln Glu Asn Glu Ile Glu Ser Trp Phe Thr Ser Ser Gly Thr
 115 120 125
 Asn Gly Leu Lys Ser Gln Val Ala Arg Asp Arg Leu Ser Ile Glu Arg
 130 135 140
 Leu Leu Gly Ser Val Ser Tyr Gly Met Lys Tyr Val Gly Ser Trp Phe
 145 150 155 160
 Asp His Gln Ile Glu Leu Val Asn Leu Gly Pro Asp Arg Phe Asn Ala
 165 170 175
 His Asn Ile Trp Phe Lys Tyr Val Met Ser Leu Val Glu Leu Tyr
 180 185 190
 Pro Thr Thr Phe Thr Val Thr Glu Glu Arg Ile Asp Phe Val Lys Thr
 195 200 205
 Leu Asn Ser Leu Glu Arg Ile Lys Asn Gln Gly Lys Asp Leu Cys Leu
 210 215 220
 Ile Gly Ser Pro Tyr Phe Ile Tyr Leu Leu Cys His Tyr Met Lys Asp
 225 230 235 240
 Lys Lys Ile Ser Phe Ser Gly Asp Lys Ser Leu Tyr Ile Ile Thr Gly
 245 250 255
 Gly Gly Trp Lys Ser Tyr Glu Lys Glu Ser Leu Lys Arg Asp Asp Phe
 260 265 270
 Asn His Leu Leu Phe Asp Thr Phe Asn Leu Ser Asp Ile Ser Gln Ile
 275 280 285
 Arg Asp Ile Phe Asn Gln Val Glu Leu Asn Thr Cys Phe Phe Glu Asp
 290 295 300
 Glu Met Gln Arg Lys His Val Pro Pro Trp Val Tyr Ala Arg Ala Leu
 305 310 315 320
 Asp Pro Glu Thr Leu Lys Pro Val Pro Asp Gly Thr Pro Gly Leu Met
 325 330 335
 Ser Tyr Met Asp Ala Ser Ala Thr Ser Tyr Pro Ala Phe Ile Val Thr
 340 345 350
 Asp Asp Val Gly Ile Ile Ser Arg Glu Tyr Gly Lys Tyr Pro Gly Val
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 Leu Val Glu Ile Leu Arg Arg Val Asn Thr Arg Thr Gln Lys Gly Cys
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 Ala Leu Ser Leu Thr Glu Ala Phe Asp Ser
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 <302> Use of the tetracycline promoter for the tightly regulated production
 of a murine antibody fragment in Escherichia coli
 <303> Gene
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 ttggagtcca cgttctttta tagtggaactc ttgttccaaa ctggaacaa actcaaccct 420
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 cattcaata tgtatccgct catgagacaa taacctgat aaatgcttca ataatttga 660

aaaaggaaga gt atg agt att caa cat ttc cgt gtc gcc ctt att ccc ttt 711
 Met Ser Ile Gln His Phe Arg Val Ala Leu Ile Pro Phe
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 Phe Ala Ala Phe Cys Leu Pro Val Phe Ala His Pro Glu Thr Leu Val
 15 20 25

aaa gta aaa gat gct gaa gat cag ttg ggt gca cga gtg ggt tac atc 807
 Lys Val Lys Asp Ala Glu Asp Gln Leu Gly Ala Arg Val Gly Tyr Ile
 30 35 40 45

gaa ctg gat ctg aac agc ggt aag atc ctt gag agt ttt cgc ccc gaa 855
 Glu Leu Asp Leu Asn Ser Gly Lys Ile Leu Glu Ser Phe Arg Pro Glu
 50 55 60

gaa cgt ttt cca atg atg agc act ttt aaa gtt ctg cta tgt ggc gcg 903
 Glu Arg Phe Pro Met Met Ser Thr Phe Lys Val Leu Leu Cys Gly Ala
 65 70 75

gta tta tcc cgt att gac gcc ggg caa gag caa ctg ggt cgc cgc ata 951
 Val Leu Ser Arg Ile Asp Ala Gly Gln Glu Gln Leu Gly Arg Arg Ile
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cac tat tct cag aat gac ttg gtt gag tac tca cca gtc aca gaa aag 999
 His Tyr Ser Gln Asn Asp Leu Val Glu Tyr Ser Pro Val Thr Glu Lys
 95 100 105

cat ctt acg gat ggc atg aca gta aga gaa tta tgc agt gct gcc ata 1047
 His Leu Thr Asp Gly Met Thr Val Arg Glu Leu Cys Ser Ala Ala Ile
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acc atg agt gat aac act gcg gcc aac tta ctt ctg aca acg atc gga 1095
 Thr Met Ser Asp Asn Thr Ala Ala Asn Leu Leu Thr Thr Ile Gly
 130 135 140

gga cgc aag gag cta acc gct ttt ttg cac aac atg ggg gat cat gta 1143
 Gly Pro Lys Glu Leu Thr Ala Phe Leu His Asn Met Gly Asp His Val
 145 150 155

act cgc ctt gat cgt tgg gaa ccg gag ctg aat gaa gcc ata cca aac 1191
 Thr Arg Leu Asp Arg Trp Glu Pro Glu Leu Asn Glu Ala Ile Pro Asn
 160 165 170

gac gag cgt gac acc acg atg cct gta gca atg gca aca acg ttg cgc 1239
 Asp Glu Arg Asp Thr Thr Met Pro Val Ala Met Ala Thr Thr Leu Arg
 175 180 185

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 Lys Leu Leu Thr Gly Glu Leu Leu Thr Leu Ala Ser Arg Gln Gln Leu
 190 195 200 205

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 Ile Asp Trp Met Glu Ala Asp Lys Val Ala Gly Pro Leu Leu Arg Ser
 210 215 220

gcc ctt ccg gct ggc tgg ttt att gct gat aaa tct gga gcc ggt gag 1383
 Ala Leu Pro Ala Gly Trp Phe Ile Ala Asp Lys Ser Gly Ala Gly Glu
 225 230 235

cgt ggc tct cgc ggt atc att gca gca ctg ggg cca gat ggt aag ccc 1431
 Arg Gly Ser Arg Gly Ile Ile Ala Ala Leu Gly Pro Asp Gly Lys Pro
 240 245 250

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 270 275 280 285

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 Trp Met Ser Arg Leu Asp Lys Ser Lys Val Ile Asn Ser
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 Lys Leu Ala Gln Lys Leu Gly Val Glu Gln Pro Thr Leu Tyr Trp His
 315 320 325 330

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 Val Lys Asn Lys Arg Ala Leu Leu Asp Ala Leu Ala Ile Glu Met Leu
 335 340 345

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 Asp Arg His His Thr His Phe Cys Pro Leu Glu Gly Glu Ser Trp Gln
 350 355 360

gat ttt tta cgt aat aac gct aaa agt ttt aga tgt gct tta cta agt 1818
 Asp Phe Leu Arg Asn Asn Ala Lys Ser Phe Arg Cys Ala Leu Leu Ser
 365 370 375

cat cgc gat gga gca aaa gta cat tta ggt aca cgg cct aca gaa aaa 1866
 His Arg Asp Gly Ala Lys Val His Leu Gly Thr Arg Pro Thr Glu Lys
 380 385 390

cag tat gaa act ctc gaa aat caa tta gcc ttt tta tgc caa caa ggt 1914
 Gln Tyr Glu Thr Leu Glu Asn Gln Leu Ala Phe Leu Cys Gln Gln Gly
 395 400 405 410

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 Phe Ser Leu Glu Asn Ala Leu Tyr Ala Leu Ser Ala Val Gly His Phe
 415 420 425

act tta ggt tgc gta ttg gaa gat caa gag cat caa gtc gct aaa gaa 2010
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 430 435 440

gaa agg gaa aca cct act act gat agt atg ccg cca tta tta cga caa 2058
 Glu Arg Glu Thr Pro Thr Thr Asp Ser Met Pro Pro Leu Leu Arg Gln
 445 450 455

gct atc gaa tta ttt gat cac caa ggt gca gag cca gcc ttc tta ttc 2106
 Ala Ile Glu Leu Phe Asp His Gln Gly Ala Glu Pro Ala Phe Leu Phe
 460 465 470

ggc ctt gaa ttg atc ata tgc gga tta gaa aaa caa ctt aaa tgt gaa 2154
 Gly Leu Glu Leu Ile Ile Cys Gly Leu Glu Lys Gln Leu Lys Cys Glu
 475 480 485 490

agt ggg tct taaaagcagc ataacctttt tccgtgatgg taacttcaat 2203
 Ser Gly Ser

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 20 25 30
 Asp Ala Glu Asp Gln Leu Gly Ala Arg Val Gly Tyr Ile Glu Leu Asp
 35 40 45
 Leu Asn Ser Gly Lys Ile Leu Glu Ser Phe Arg Pro Glu Glu Arg Phe
 50 55 60
 Pro Met Met Ser Thr Phe Lys Val Leu Leu Cys Gly Ala Val Leu Ser
 65 70 75 80
 Arg Ile Asp Ala Gly Gln Glu Gln Leu Gly Arg Arg Ile His Tyr Ser
 85 90 95
 Gln Asn Asp Leu Val Glu Tyr Ser Pro Val Thr Glu Lys His Leu Thr
 100 105 110
 Asp Gly Met Thr Val Arg Glu Leu Cys Ser Ala Ala Ile Thr Met Ser
 115 120 125
 Asp Asn Thr Ala Ala Asn Leu Leu Thr Thr Ile Gly Gly Pro Lys
 130 135 140

Glu Leu Thr Ala Phe Leu His Asn Met Gly Asp His Val Thr Arg Leu
 145 150 155 160
 Asp Arg Trp Glu Pro Glu Leu Asn Glu Ala Ile Pro Asn Asp Glu Arg
 165 170 175
 Asp Thr Thr Met Pro Val Ala Met Ala Thr Thr Leu Arg Lys Leu Leu
 180 185 190
 Thr Gly Glu Leu Leu Thr Leu Ala Ser Arg Gln Gln Leu Ile Asp Trp
 195 200 205
 Met Glu Ala Asp Lys Val Ala Gly Pro Leu Leu Arg Ser Ala Leu Pro
 210 215 220
 Ala Gly Trp Phe Ile Ala Asp Lys Ser Gly Ala Gly Glu Arg Gly Ser
 225 230 235 240
 Arg Gly Ile Ile Ala Ala Leu Gly Pro Asp Gly Lys Pro Ser Arg Ile
 245 250 255
 Val Val Ile Tyr Thr Thr Gly Ser Gln Ala Thr Met Asp Glu Arg Asn
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 Arg Gln Ile Ala Glu Ile Gly Ala Ser Leu Ile Lys His Trp
 275 280 285

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 Lys Leu Gly Val Glu Gln Pro Thr Leu Tyr Trp His Val Lys Asn Lys
 35 40 45
 Arg Ala Leu Leu Asp Ala Leu Ala Ile Glu Met Leu Asp Arg His His
 50 55 60
 Thr His Phe Cys Pro Leu Glu Gly Glu Ser Trp Gln Asp Phe Leu Arg
 65 70 75 80
 Asn Asn Ala Lys Ser Phe Arg Cys Ala Leu Ser His Arg Asp Gly
 85 90 95
 Ala Lys Val His Leu Gly Thr Arg Pro Thr Glu Lys Gln Tyr Glu Thr
 100 105 110
 Leu Glu Asn Gln Leu Ala Phe Leu Cys Gln Gln Gly Phe Ser Leu Glu
 115 120 125
 Asn Ala Leu Tyr Ala Leu Ser Ala Val Gly His Phe Thr Leu Gly Cys
 130 135 140
 Val Leu Glu Asp Gln Glu His Gln Val Ala Lys Glu Glu Arg Glu Thr
 145 150 155 160

Pro Thr Thr Asp Ser Met Pro Pro Leu Leu Arg Gln Ala Ile Glu Leu
 165 170 175
 Phe Asp His Gln Gly Ala Glu Pro Ala Phe Leu Phe Gly Leu Glu Leu
 180 185 190
 Ile Ile Cys Gly Leu Glu Lys Gln Leu Lys Cys Glu Ser Gly Ser
 195 200 205
